

We claim:

1. An integrated process for compounding a peroxide catalyst containing silicone rubber composition comprising the steps of

A) blending a composition comprising i) 100 parts by weight of a high consistency polydiorganosiloxane, ii) about 10 to 80 parts by weight of a reinforcing silica filler, and iii) about 10 to 45 weight percent, based on the weight of the reinforcing silica filler, of a treating agent for the reinforcing silica filler by maintaining the filler in a highly

turbulent, fluidized state at a temperature of 80°C to about 350°C and maintaining the temperature and highly turbulent fluidized state while subjecting the blend to shearing force sufficient to achieve an average particle size of from 1 to 1000 microns thereby forming an organosiloxane composition in the form of a flowable powder,

B) facilitating accelerated bulk cooling of the organosiloxane composition to a temperature below the decomposition temperature of an organoperoxide catalyst added in step (D),

C) feeding the bulk cooled organosiloxane composition to an extruder and massing the composition therein at a temperature below the decomposition temperature of an organoperoxide catalyst added in step (D),

D) adding a catalytic amount of an organoperoxide catalyst to the organosiloxane composition either prior to, during, or after step C at a temperature below the decomposition temperature of the organoperoxide catalyst, and

E) recovering an organoperoxide catalyst containing silicone rubber composition mass.

2. An integrated process according to Claim 1, where the high consistency polydiorganosiloxane has a viscosity within a range of about 6×10^4 to 1×10^8 mPa·s at 25°C.

3. An integrated process according to Claim 1, where the high consistency polydiorganosiloxane has a viscosity within a range of about 1×10^6 to 1×10^7 mPa·s at 25°C.

4. An integrated process according to Claim 1, where the high consistency polydiorganosiloxane is selected from the group consisting of trimethylsiloxy end-capped polydimethylsiloxane, vinyltrimethylsiloxy end-capped polydimethylsiloxane, vinyltrimethylsiloxy end-capped polydimethyl/vinylmethylsiloxane copolymer, and trimethylsiloxy end-capped polydimethyl/vinylmethylsiloxane copolymer.
5. An integrated process according to Claim 1, where the reinforcing silica filler is a fumed silica having a surface area within a range of about 75 m²/g to 1000 m²/g.
6. An integrated process according to Claim 5 comprising about 20 to 50 parts by weight of the reinforcing silica filler per 100 parts by weight of the high consistency polydiorganosiloxane.
7. An integrated process according to Claim 1, where the treating agent is a low molecular weight hydroxy endblocked polydimethylsiloxane fluid.
8. An integrated process according to Claim 1 comprising about 15 to 35 weight percent of the treating agent, based on the weight of the reinforcing silica filler.
9. An integrated process according to Claim 1, where in step (A) the temperature is within a range of about 100°C to 180°C.
10. An integrated process according to Claim 1, where organoperoxide catalyst is selected from the group consisting of 2,4-dichlorobenzoyl peroxide and 2,5-bis(tertiarybutyl peroxy)-2,5-dimethylhexane.
11. An integrated process according to Claim 1 comprising about 0.1 to 10 weight percent of the organic peroxide, based on the weight of the composition.

12. An integrated process according to Claim 1, where the peroxide catalyst is added in a mixing step conducted after step (C).

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